

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in this application.

Listing of Claims:

1. (Currently Amended) Fuel-fired heating apparatus comprising:
a combustion chamber having ~~an~~ a relatively rigid interior side portion;
a fuel burner extending through said combustion chamber in a spaced apart, noncontacting relationship with said interior side portion thereof, said fuel burner having a burner side portion facing said interior side portion of said combustion chamber; and
an insulation structure sandwiched between and contacting said burner side portion and said interior side portion of said combustion chamber and preventing contact between said burner side portion and said interior side portion of said combustion chamber in a direction transverse to said interior side portion of said combustion chamber, said insulation structure being resiliently compressible between said burner side portion and said interior side portion of said combustion chamber in response to thermal expansion of said fuel burner, during firing thereof, in said direction transverse to said interior side portion of said combustion chamber.

2. (Original) The fuel-fired heating apparatus of Claim 1 wherein:
said fuel burner is a premix-type fuel burner.

3. (Original) The fuel-fired heating apparatus of Claim 1 wherein:
said interior side portion of said combustion chamber is defined by a relatively rigid insulation material.

4. (Original) The fuel-fired heating apparatus of Claim 3 wherein:
said relatively rigid insulation material is a fiberboard insulation material.

5. (Original) The fuel-fired heating apparatus of Claim 1 wherein:
said insulation structure is a ceramic fiber insulation blanket.

6. (Original) The fuel-fired heating apparatus of Claim 1 wherein;
said insulation structure substantially prevents uncombusted fuel flow between said fuel burner and said interior side portion of said combustion chamber.

7. (Original) The fuel-fired heating apparatus of Claim 1 wherein:
said fuel-fired heating apparatus is a boiler.

8. (Original) The fuel-fired heating apparatus of Claim 7 wherein:
said boiler is a gas-fired boiler.

9. (Original) The fuel-fired heating apparatus of Claim 1 wherein:
said fuel burner is a first fuel burner,
said heating apparatus further comprises a second fuel burner extending through said combustion chamber in a spaced apart relationship with said first fuel burner, and
said first and second fuel burners are operable in a staged manner.

10. (Original) The fuel-fired heating apparatus of Claim 1 wherein:
said fuel burner is a gas burner.

11. (Currently Amended) Fuel-fired heating apparatus comprising:
a combustion chamber having a relatively rigid bottom interior side portion;

a heat exchanger structure horizontally extending through said combustion chamber and being adapted to receive a through-flow of a fluid to be heated;

a plurality of tubular fuel burners longitudinally extending horizontally through said combustion chamber in a laterally spaced apart mutually parallel orientation, said fuel burners being positioned below said heat exchanger structure and being positioned above said bottom interior side portion of said combustion chamber in a noncontacting relationship therewith, and said plurality of tubular fuel burners having bottom side portions spaced upwardly apart from and facing said bottom interior side portion of said combustion chamber; and

~~control apparatus operative to provide for staged firing of said fuel burners to heat fluid flowing through said heat exchanger structure; and~~

a resilient insulation structure sandwiched between and contacting said bottom interior side portion of said combustion chamber and said bottom side portions of said fuel burners and preventing contact between said burner side portions and said interior side portion of said combustion chamber in a direction transverse to said interior side portion of said combustion chamber, said resilient insulation structure being resiliently compressible by differential thermal expansion of said fuel burners, during firing thereof, in said direction transverse to said interior side portion of said combustion chamber.

12. (Original) The fuel-fired heating apparatus of Claim 11 wherein:
said fuel-fired heating apparatus is a boiler.

13. (Original) The fuel-fired heating apparatus of Claim 11 wherein:
said fuel burners are gas burners.
14. (Original) The fuel-fired heating apparatus of Claim 11 wherein:
said fuel burners are premix-type fuel burners.
15. (Original) The fuel-fired heating apparatus of Claim 11 wherein:
said bottom interior side portion of said combustion chamber is
defined by a relatively rigid insulation material.
16. (Original) The fuel-fired heating apparatus of Claim 15 wherein:
said relatively rigid insulation material is a fiberboard material.
17. (Original) The fuel-fired heating apparatus of Claim 11 wherein:
said resilient insulation material is an insulation blanket structure.
18. (Original) The fuel-fired heating apparatus of Claim 17 wherein:
said insulation blanket structure is a ceramic fiber material.
19. (Original) The fuel-fired heating apparatus of Claim 11 wherein:
said resilient insulation structure substantially prevents flow of
uncombusted fuel from firing burners through any portion of the vertical
space between said fuel burners and said bottom interior side portion of
said combustion chamber.

20. (Original) The fuel-fired heating apparatus of Claim 19 wherein:
said bottom interior side portion of said combustion chamber is
defined by a relatively rigid fiberboard insulation material, and
said resilient insulation material is a ceramic fiber insulation blanket
structure.

21-39. (Canceled)